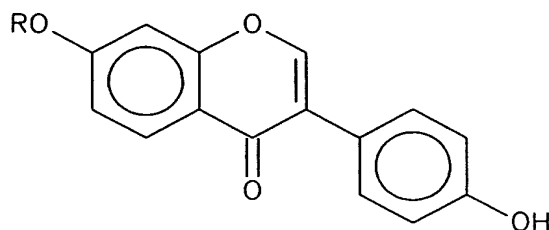


What is claimed is:

1. A method for inhibiting ALDH-2 in a human comprising contacting ALDH-2 with a compound of formula I

Formula I



wherein:

R is substituted or unsubstituted and is a

sugar moiety;

peptide;

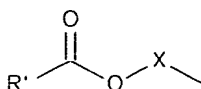
polyether;

straight chain alkyl having 1-11 carbon atoms, or branched chain alkyl having 1-30 carbon atoms, where the branched chain alkyl comprises a straight chain alkyl portion having 1-11 carbon atoms substituted with straight or branched chain lower alkyl groups having 1-6 carbon atoms;

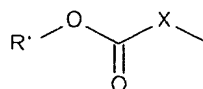
hydroxyalkyl where the alkyl portion is straight chain alkyl having 2-11 carbon atoms, or branched chain alkyl having 2-30 carbon atoms, where the branched chain alkyl comprises a straight chain alkyl portion having 2-11 carbon atoms substituted with straight or branched chain lower alkyl groups having 1-6 carbon atoms;

aminoalkyl where the alkyl portion is straight chain alkyl having 2-11 carbon atoms, or branched chain alkyl having 2-30 carbon atoms, where the branched chain alkyl comprises a straight chain alkyl portion having 2-11 carbon atoms substituted with straight or branched chain lower alkyl groups having 1-6 carbon atoms;

carboxyalkyl where the alkyl portion is straight chain alkyl having 2-11 carbon atoms, or branched chain alkyl having 2-30 carbon atoms, where the branched chain alkyl comprises a straight chain alkyl portion having 2-11 carbon atoms substituted with straight or branched chain lower alkyl groups having 1-6 carbon atoms; or



or



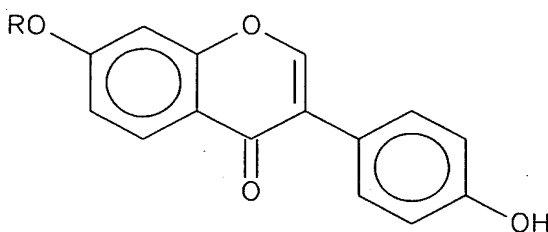
27 where X is straight chain alkylene having 2-11 carbon atoms, or branched chain alkylene
28 having 2-30 carbon atoms, where the branched chain alkylene comprise a straight chain
29 alkylene portion having 2-11 carbon atoms substituted with straight or branched chain lower
30 alkyl groups having 1-6 carbon atoms; and

31 R' is straight or branched alkyl having 1-6 carbon atoms,
32 in an amount effective to increase concentration of 5-hydroxyindole-3-acetic acid or 3,4-
33 dihydroxyphenylacetic acid.

1 2. The method of claim 1 wherein the sugar moiety is glucosyl, L or D aldo or
2 keto-tetrose, pentose, heptose, an amino, alcohol or acid derivative of tetrose, pentose, hexose
3 or heptose, a deoxyanalog of tetrose, pentose, hexose or heptose.

1 3. A method for therapeutically treating alcohol consumption in a human
2 comprising administering a compound of formula I

3 Formula I



4 wherein:

5 R is substituted
6 or unsubstituted and is a
7 sugar moiety;

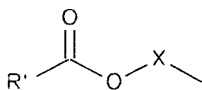
8 peptide;
9 polyether;

10 straight chain alkyl having 1-11 carbon atoms, or branched chain alkyl having 1-30
11 carbon atoms, where the branched chain alkyl comprises a straight chain alkyl portion having
12 1-11 carbon atoms substituted with straight or branched chain lower alkyl groups having 1-6
13 carbon atoms;

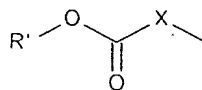
14 hydroxyalkyl where the alkyl portion is straight chain alkyl having 2-11 carbon atoms,
15 or branched chain alkyl having 2-30 carbon atoms, where the branched chain alkyl comprises
16 a straight chain alkyl portion having 2-11 carbon atoms substituted with straight or branched
17 chain lower alkyl groups having 1-6 carbon atoms;

18 aminoalkyl where the alkyl portion is straight chain alkyl having 2-11 carbon atoms,
19 or branched chain alkyl having 2-30 carbon atoms, where the branched chain alkyl comprises
20 a straight chain alkyl portion having 2-11 carbon atoms substituted with straight or branched
21 chain lower alkyl groups having 1-6 carbon atoms;

22 carboxyalkyl where the alkyl portion is straight chain alkyl having 2-11 carbon atoms,
23 or branched chain alkyl having 2-30 carbon atoms, where the branched chain alkyl comprises
24 a straight chain alkyl portion having 2-11 carbon atoms substituted with straight or branched
25 chain lower alkyl groups having 1-6 carbon atoms; or



27 or



28 where X is straight chain
29 alkylene having 2-11 carbon atoms, or branched chain alkylene having 2-30 carbon atoms,
30 where the branched chain alkylene comprise a straight chain alkylene portion having 2-11
31 carbon atoms substituted with straight or branched chain lower alkyl groups having 1-6
32 carbon atoms; and

33 R' is straight or branched alkyl having 1-6 carbon atoms,
34 in an amount effective to increase concentration of an aldehyde formed during catabolism of
35 a neurotransmitter.

1 4. The method of claim 3 wherein the sugar moiety is glucosyl, L or D aldo or
2 keto-tetrose, pentose, heptose, an amino, alcohol or acid derivative of tetrose, pentose, hexose
3 or heptose, a deoxyanalog of tetrose, pentose, hexose or heptose.

5. The method of claim 3 wherein the neurotransmitter is serotonin or dopamine.

6. The method of claim 3 wherein the aldehyde is 5-hydroxyindole-3-
acetaldehyde or 3,4-dihydroxyphenyl-3-acetaldehyde.

1 7. A method for identifying compounds effective in reducing alcohol
2 consumption comprising selecting a test compound,
3 establishing a neurotransmitter enzyme system,
4 allowing catabolism of a neurotransmitter into aldehyde,
5 allowing catabolism of aldehyde into carboxylic acid,
6 measuring a first concentration of aldehyde,
7 contacting the candidate compound with the neurotransmitter enzyme system,
8 measuring a second concentration of aldehyde,
9 comparing the first concentration to the second concentration.

1 8. The method of claim 7 wherein the neurotransmitter is serotonin or dopamine.

1 9. The method of claim 7 wherein the aldehyde is 5-hydroxyindole-3-acetic acid
2 or 3,4-dihydroxyphenylacetic acid.

1 10. A method for identifying compounds effective in reducing alcohol
2 consumption comprising selecting a test compound,
3 establishing a neurotransmitter enzyme system,
4 allowing catabolism of a neurotransmitter into aldehyde,
5 allowing catabolism of aldehyde into carboxylic acid,
6 contacting the candidate compound with the neurotransmitter enzyme system,
7 measuring a concentration of aldehyde, and
8 comparing the concentration of aldehyde with concentrations of aldehyde produced
9 by compounds having known antidipsotropic activity.

1 11. The method of claim 10 wherein the neurotransmitter is serotonin or
2 dopamine.

1 12. The method of claim 10 wherein the aldehyde is 5-hydroxyindole-3-acetic acid
2 or 3,4-dihydroxyphenylacetic acid.